ASSESSMENT OF AGRICULTURAL AWARENESS OF HIGH SCHOOL SENIORS IN NASSAU BAHAMAS

By

JOHN CASH

Bachelor of Science in Agriculture

Oklahoma State University

Stillwater, Oklahoma

1996

Submitted to the faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
December, 1997

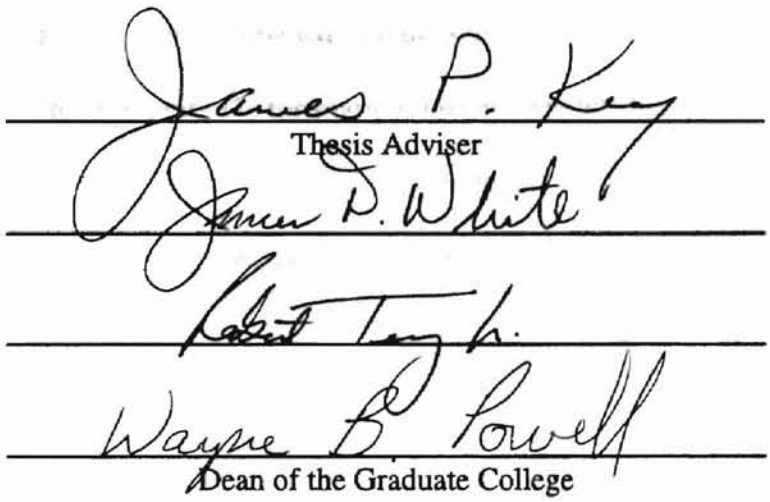
ASSESSMENT OF AGRICULTURAL

AWARENESS OF HIGH SCHOOL

SENIORS IN NASSAU

BAHAMAS

Thesis Approved:



Thesis Adviser

Dean of the Graduate College

ACKNOWLEDGMENTS

The writer is pleased to express his allegiance to the Holy Spirit of God with His advise and direction made this study possible. Sincere thanks is expressed to the number one supporter and contributor, Barbara Cash, who allowed the opportunity for the writer's degree to be formed.

Special appreciation goes out to the sponsors and participants of this study, with their help this study was able to be completed. To the staff of Oklahoma State University the writer would like to utter gratitude for sharing time and knowledge over the past few years. Recognition and appreciation are also extended to the members of this thesis committee for their valuable assistance: Dr. Jim Key, Dr. James White, and Dr. Robert Terry Jr.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

In order to have a strong and successful independent economy, the economy must be able to provide for itself. There are certain necessities that must be provided to make an economy independently successful; these necessities include food, clothing and shelter. Agriculture provides food, clothing, jobs, and shelter as it involves the use of natural resources. Agriculture is a foundation of a nation's standard of living. Its production exists everywhere in the world but is limited to regional factors. An independently successful economy should be able to produce enough food to adequately sustain itself and to meet its potential growth. A strong independent economy provides consistently and adequately for itself and for its growth, being of similar parity in relation to other surrounding economies. Success of modern agriculture can allow an economy to diversify and develop many other industries (20).

The existence of an agricultural industry and the extent of its use provide the basis for an independently successful economy. Decision makers who are involved in the economies progress should be aware of decisions that have an impact on the agricultural industry, as noted in a summary report (20):

> Agriculture is one of the most crucial sectors in the economic development of the less development nations. The institutions which provide the technical leadership and service are vital to the change from traditional agriculture to modern self sustaining form (p. 4).

A growing economy should be aware of the resources that exist within its use and manage those resources efficiently to build a strong and successful economy. Agriculture is the world's largest and most essential industry as people everywhere consume agricultural products. In many parts of the world ownership of land and the educational level of farmers affects what is grown within an economy (10).

Background of Problem

Education is the key to a bright and prosperous future. As Khan noted in his work in many countries where 50 to 90 percent of the population depends on agriculture as a source of living, only a relatively small proportion of students in college and universities major in agriculture. Other industries seem to attract students to invest their future as a source of career (9).

In the Bahamas there are other more notable industries that serve as solid support for the economy. Tourism is the number one industry in the Bahamas, and it provides the major source of revenue for the economy. The lovely beaches, famous sport fishing, and luxurious hotels of the Bahamas attract many visitors. Visitors come from all over the world as half a million tourist touch the Bahamian shores annually, which greatly outnumber the residents. Banking the second largest industry of the economy, has been important financial center over the past two decades (5).

The geographical setup and the topography of the land makes agriculture challenging as most of the islands are narrow and rocky with shallow soil. Although the Bahamas does not have a basic agricultural economy, the emphasis placed by the government in developing this sector is beginning to show favorable results (13).

Problem

Agriculture in the Bahamas, is dominated by small scale operations. It is estimated that 10 percent of acreage suitable for tillage is presently being cultivated. About 85 percent of the food consumed locally in the Bahamas is imported, and total agriculture and fishing account for less than 5 percent of the GDP.. The Bahamas imports millions of dollars worth of food annually. The fishing industry is unable to supply fish in sufficiently regular quantities to meet the domestic market demand.

In the Bahamas the level of agriculture production is low, the size of farms is small, and imports greatly exceed exports. Production methods that exist are traditional. Many farmers use traditional methods of raising and producing animals, as most animals are stored in wooden built pens. Production records are not kept consistently, and in some cases they are stored as memory in the head of farmers. Most of the farmers are fifty years of age or older. The cut and burn method of farming is the most commonly used method of farming, very few farmers use tractors in producing goods, and most crops are planted by hand.

It appears that many Bahamian farmers are unaware of the technological opportunities that exist in agriculture and matters relating to its efficient production. This would imply a need for an assessment of the existing agriculture industry. Alternative methods of record keeping, production techniques, and management strategies exist, and if applicable these alternative methods can be implemented to increase the farm production, the agricultural industry, and the economy. Current production techniques, alternative management strategies, and alternative record keeping

methods are a few of the sources that could be used as resource tools to evaluate for improvement.

Domestic market arrangements are an inhibitor to the development of agriculture. A fundamental flaw exist and government policy regarding agriculture is not clearly articulated, which inhibits agriculture development. Produce Exchange in Nassau and Freeport run a cumulative deficit of about $18 million. High spoilage rates, poor quality standards, and high overhead cost, are contributors to the deficits.

There is, therefore, a need to assess the level of awareness about agriculture within the Bahamas as a means to educate producers and the citizens in matters relating to the agricultural industry. This awareness level will serve as an indicator of the need for an increased level of knowledge relating to agriculture, with the intent of exposing the citizens to the potential opportunities that an agricultural industry possesses and educating the producers in modern technological processes of agriculture. Agricultural awareness of high school students should be a reflection of the overall awareness of citizens of the Bahamas.

Purpose

The purpose of this study was to assess the agricultural awareness of high school seniors in Nassau, Bahamas.

Objectives

In order to accomplish this purpose of the study, the following objectives were established:

1) To determine the perceptions of Bahamian high school seniors toward agriculture.

2) To determine the awareness level of Bahamian high school seniors concerning agricultural concepts.

3) To determine the awareness level of Bahamian high school seniors with regard to Bahamian agriculture.

Assumptions

For the purpose of this study, the following assumptions were accepted. It is assumed that:

1) high school seniors are a representation of the awareness that exists within a growing society.

2) high school seniors answered the questions honestly and to the best of their knowledge.

3) students answered only those questions they knew, and thus guessing which could result in a measurement error was minimized.

4) all students participating in this study were able to read and understand the questions.

Scope

The scope of this study included selected high school seniors in Nassau, Bahamas.

Definitions

Third World - the economically underdeveloped countries of Africa, Oceania, and Latin America.

Rural - engaged in agricultural pursuits.

Agriculture - the art of farming in which people use technology to aid them in the production of plants, trees, animals and fish.

Agricultural awareness - knowledge of the current economic social and environmental significance condition of the existing agricultural industry; knowledge of the production and products being produced; knowledge needed to care for the environment; knowledge to participate in the policies that affect the agricultural industry.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Agricultural industries have effects on labor requirements, migration, and immigration patterns. The development of an agricultural industry within a economy relates to the development of the education within that economy. Agricultural education's role in continuing adult education is to meet both the technical and the social - cultural requirements of rural societies in the process of development and modernization (20).

A review of related literature was conducted to become better acquainted with numerous aspects relative to this study. The researcher felt the need to include the following areas in the review of literature:

1) Agriculture in developing countries
2) Agriculture in the Bahamas
3) Agriculture Education in developing countries
4) Education in the Bahamas
5) Agricultural Literacy studies
6) Summary

Agriculture in Developing Countries

Presently there is a general recognition of the urgent need for agricultural development in most lesser developed countries. The institutions which provide the technical leadership and service are vital to the change from an outdated traditional agriculture to a modern self sustaining form (10).

Countries whose economies and education system were conditioned early have lower illiteracy rates, higher levels of educational attainment, and greater equality in education for men and women. Countries with more recent economic growth and educational expansion show a strong increase in enrollments at the secondary and tertiary levels of education, yet illiteracy rates among younger people in rural areas often remain high. Future success on improving the educational levels of the less advantaged will depend not only on the design of educational policies and strategies that address the specific needs but also on a firm commitment and concerted effort by educators, government officials, and international organizations to provide more and better education (11).

In a summary report given from a rural development project, agriculture was recognized as one of the most crucial sectors in the economic development of the lesser developed nation. In observing the agricultural industry in third world countries most active experts would agree that agricultural education is in trouble and should be given top priority (20).

The Caribbean, with a population of 20 million, has high trade to output ratios. Due to the high reliance on imports, countries in the Caribbean in the past have been subject to a variety of external shocks due to terms of trade effects and changes in the

external demand for their exports (13). The government has imposed reforms such as budgetary discipline in the public sector, reduced international trade barriers, realignment of exchange rates, and deregulation of finical markets. These reforms have changed the role of the country but barely affected the labor markets. It is now apparent that these reforms were not enough to encourage private sector to invest and create jobs quickly enough to build support for market - oriented policies. There is a need to find new instruments of social policy that do not disrupt the allocation of resources. These instruments should reduce the distortions that persist in economies while improving the living standards and economic opportunities (25).

Agriculture in the Bahamas

The Bahamas comprises an archipelago of islands which are composed of coralline limestone and are usually long and narrow. The rock is permeable with no streams, and the water supply has to be derived from shallow wells or from rain water collected in catchments and cisterns. The shallow soils found in small pocket in the limestone rock allow limited cultivation and suit a variety of sub - tropical vegetables and fruit (23).

The agricultural industry in the Bahamas in the 1980's consisted mainly of small poultry farms, fruit farms, and vegetable farms. The goods were produced for the local market, and some citrus fruits and seasonal vegetables were exported. The government has placed policy importance on the expansion of domestic agricultural production to reduce food imports and expand exports by investing in research, diverse programs, and

marketing facilities leading to continual growth in winter vegetables, fruit, and poultry products (24).

Agriculture in the Bahamas, being dominated by small scale operations producing poultry, fruit and vegetables, is not being maximized. It is estimated that 10 percent of acreage suitable for tillage is presently being cultivated. About 85 percent of the food consumed locally in the Bahamas is imported, and total agriculture and fishing account for less than 5 percent of the GDP. The government has encouraged local agricultural production by providing farmers with a guaranteed floor price for output, regulating imports, and restricting import licenses during periods of local supply. Potential for expansion exists despite the efforts made by the government, and subsidy elements in the present operations are deemed appropriate from a developmental and sociological viewpoint. Agricultural production statistics showed that the agricultural economic sector needs developing. In 1985 it was estimated that Bahamian farmers produced 20 percent of the food consumed on the islands. This resulted in the importation of millions of dollars worth of food annually. The food bill for that year amounted to about US $200 million (1).

Domestic market arrangements are an inhibitor to the development of agriculture. A fundamental flaw exist and government policy regarding agriculture is not clearly articulated, which inhibits agriculture development. Produce Exchange in Nassau and Freeport run a cumulative deficit of about $18 million. High spoilage rates, poor quality standards, and high overhead cost, are contributors to the deficits. A review of operational procedures, policy pricing and supply management is urgently needed to improve quality and quantity control. Aquaculture has significant potential. A review

and drafting of fishing regulation is being made to provide an upgrade in quality standards and a sound foundation for improvements in the marketing systems. The fishing industry is unable to supply fish in sufficiently regular quantities to meet the domestic market demand. This sector offers considerable potential to the agricultural industry with its exports valued at US$18 million. Training programs have been made to encourage young people to enter a fishing career (24).

Agriculture Education in Developing Countries

In a study conducted in several different countries in an attempt to find out how students of different parts of the world read in relation to each other, the researcher noted that (25):

> In comparing various countries or anything else, for that matter, one should examine the degree to which the bases for the comparisons are fair and valid. Besides differing in language and culture, countries differ substantially in wealth, development, and the resources available to education (p. 51).

The study concluded that high levels of adult literacy within the society suggest a greater societal pressure for the next generation (25).

Students with an interest in agriculture have to get the opportunities to study more advanced vocational courses. All students must be agricultural literate besides common literacy in science, and humanities. It must be shown that agriculture is a technical, progressive career fields, and an interest must be created to further agriculture education. Studying material relevant to agriculture at the science courses gives the possibility to revise ideas and theories of science in connection with practical usage. Student can gain scientific and agricultural knowledge (14).

In Africa a study was done on agricultural education and training for rural development. It was noted that there existed an urgent need for adoption of academic training to deal with large number of students with minimal facilities. The study showed how agricultural education students rated selected factors that influenced their curriculum choice. Among the selected factors chosen were instructors, advisors, and job opportunities (10).

Khan noted in a study of higher education in agriculture and rural development analysis that agricultural education's role in continuing adult education is to meet both the technical and socio - cultural requirements of rural societies in development and modernization.

Education is an important part of a economy's progress as Shen observed, in a study relating to thinking, knowledge, and attitudes of high school students (9).

> Most active educational experts would agree that agriculture education in the third world is in trouble and should be given top priority for economic, social, and ethical reasons. What then is the problem? And if there is a problem, what remedy, if any, can be envisaged to solve it? (p. 13).

The success of economic reform in socialist economies depends heavily on the economic thinking of the population. High school students are the least encumbered by past experience, and it is important to focus on their life learning and value formation (25).

Education in the Bahamas

In the Bahamas vocational training started in the early 1980's to provide the basic skills necessary for economic growth and reduction in unemployment. Carpentry,

welding, upholstery, cosmetology, electronics, and food preparation were some of the courses offered (1).

Knowledge of production, processing, and preservation have been passed down through generations, while today agriculture relies on research. In the process of time human ingenuity has solved problems relating to the production, storage, and preparation of food. Agricultural practices have changed in response to the economy's need and new knowledge over time, and improvements in practices will continue as society is aware of the critical nature of the agricultural system. Modern agriculture involves studying traditional practices and combining them with state of the art technologies to address production problems. Any culture that hopes to prosper must be aware about the environment and agriculture system. Educational models can reinforce and promote acceptance of a progressive world view. The next generation should be better prepared than the current generation with the educational models currently used. Perceptions must be shifted to enhance further future thinking about agriculture. Continued growth in population means greater demand for agriculture and a greater demand for qualified people in agricultural industries. Agriculture is changing rapidly, and many of tomorrow's careers have not yet been explored. A interdisclipinary model for education, available over a number of developmental years, would be a big step toward this goals. Education will help equip the economy to become cultural determiners instead of culturally determined (19).

Steady efforts have been made to improve the quality of the teaching staff and the relevance of the education curricula. Despite the efforts a number of problems remain. One problem is seen in the economy which has not expanded or diversified regionally.

Another problem is that quantitative measures indicate that the quality of the system needs further enhancement. The success rate of the exit examination needs to be improved, and the technical and science training needs to be expanded to overcome the shortages in the industrial sector. The Ministry of Education is aware of the existing problems and is endeavoring to introduce the improvements where necessary (24).

Agricultural Literacy Studies

Agricultural literacy has been taken for granted, and it is often overlooked as an instructional area in agriculture education. In small communities with an economy based on agriculture the importance of teaching the concepts of agricultural literacy cannot be overemphasized (15).

What are the strategies and the process we should use to further agricultural awareness in the most applicable context? The agricultural education instructor is the major school faculty who can directly share news about agriculture to increase the agricultural and food awareness level of students. Agricultural literacy is an educational investment of time, talent, and resources that must be made for the future so that the quality of life we now enjoy continues (6).

Investment of time, talent, and resources should be in programs that include objectives to inform a variety of audiences about the ways in which a food and fiber producer treats animals ethically and works in harmony with the environment while providing safe and healthy products (22).

Most agricultural instructors have recognized the need for programs in career education at the elementary school level. Agriculture is one career field that utilizes

science, economics, mechanics and leadership. Therefore it should have a core part in the elementary school curriculum. This can make the elementary child become aware of agriculture and the things of their environment by teaching them the care of things, showing them that there are many things that effect their lives and making them aware that practically everything that they enjoy comes from work by somebody. Secondary students should also be sold on the importance of their occupations. They should be provided information and statistics about their chosen occupation that would allow interaction with other students. This is a sound way of making school children aware of nature. (21).

A study done by Clause and Jost in Ames, Iowa revealed that feelings about agriculture varied between rural and urban youth. Overall the youths in the study viewed agriculture as having a limited future, with the traditional image of agriculture dominating. It was recommended that agriculture be tied to youth interest, educate youth early about agriculture, and measure the results of development. It should be demonstrated that agriculture is relevant to youth; materials must define agriculture and be related to youths lives. The perceptions of agriculture in the lives of youth have already been shaped by the 6th grade (2).

In a study by Elliot and Frick, it was noted that the knowledge base about agriculture is further removed by the majority over time (4):

> Today's population is ill equipped to make informed decisions about food and fiber in their personal lives. Of great concern to agriculture, the loss of knowledge means that a poorly informed public majority had input in policy decisions that may affect the agricultural industry's ability to function efficiently in an increasingly competitive world market (p.6).

Elliot recommended that current formal agricultural education programs be evaluated to incorporate content and delivery methods that will increase awareness about agriculture (4).

The goal of agriculture literacy should be more than awareness building. It should address issues to shorten intellectual gap between citizens and the food systems. It should also promote knowledge, increase values and ethics. A framework for understanding agriculture must be built from a variety of viewpoints and perspectives. Agricultural literacy should promote trust and responsibility as it sensitizes people to agriculture impact on the land, environment, and people. Independent thinking should be inspired towards foods, agriculture issues, and the support of education initiatives (17).

Perceptions that agriculture education leads only to production agriculture farming or ranching has reduced students interest in higher level of agriculture education. The study of economics, technology, politics, trade, environment, biology and sociology are encompassed by agriculture. Agriculture is too wide and too important of a topic to be taught to a small percent of the students. All students should receive some systematic instruction about agriculture, much of which should be incorporated into existing courses rather than as separate courses (16).

Summary

Agriculture plays a major role in the economies of the Third World and the Caribbean nations. Existing small scale operations are not enough to meet the demand placed by the agricultural industry. Education about agriculture must meet the challenges of a changing society. Students should be made aware of the opportunities that exists

with the industry. Agricultural literacy is of major concern world wide. Existing frame works can be used to decrease agricultural illiteracy within a nation. All students should have been aware of the importance of agriculture and the effect it have on their daily lives. The subject matter of instruction about agriculture must be broaden

Agriculture is of importance to the policy makers of the Bahamian economy. However utilization of land suitable for agriculture can be used to help reduce importation bill and boost the economy. Programs should have been designed and implemented in the classrooms and in vocational schools to address agricultural awareness.

CHAPTER III

PROCEDURES

The purpose of this chapter was to describe the methods and procedures used in conducting this study. The intent of this study was to assess the agricultural awareness of high school seniors in Nassau, Bahamas as a means to build a stronger and more successful agricultural and educational industry. In order to accomplish the purpose and objectives of this study, it was necessary to determine a population and develop an instrument for data collection. The data treated in this study was collected by short answer and multiple choice answer test given to the students in fall of 1997. Specific objectives were utilized to provide direction for the conduct and design of this research effort. The specific objectives were:

1) To determine the perceptions of Bahamian high school seniors toward agriculture.

2) To determine the awareness level of Bahamian high school seniors concerning agricultural concepts.

3) To determine the awareness level of Bahamian high school seniors with regard to Bahamian agriculture.

Institutional Review Board

The Institutional Review Board (IRB) is Oklahoma State University's (OSU) governing body for the review and approval of all research dealing with human subjects conducted by OSU faculty, staff, post-doctoral, graduate, and undergraduate students regardless if it is funded or not funded research. The primary purpose of the IRB review is to ensure that the rights and welfare of human subjects are properly protected. Federal policy requires all institutions receiving federal funds to have a review board to ensure the protection of human subjects. All research dealing with human subjects must have IRB approval before the start of the project. In compliance with the policy, this study received the proper surveillance and was granted permission to continue. Furthermore, this research was assigned the following research project number: AG-97-027.

The Population

The sample of this study was derived from the entire population of high school seniors in Nassau, Bahamas. To accomplish the purpose of this study, it was uneconomical to attempt to survey the entire population. Therefore the schools were clustered and students were randomly selected. Permission to administer the assessment instrument was sought and granted from the Director of Education and the principal of the respective schools. Eight schools were chosen by the Director of Students Affairs and a sample of ten high school students were chosen by the principal of the school to be tested. Of the eight high schools selected, four were from the public sector and four were from the private sector; at one private school four-teen students participated in the study, resulting in eighty-four students who participated.

Selection and Development of the Instrument

Agricultural literacy testing, a fairly new area of development, is still faced with its share of challenges. A lack of evaluation instruments to be used in assessing teaching effectiveness was determined after conducting an extensive literature review. Many tests to assess literacy have been developed, but they showed signs of limitations in fitting the criterion of all literacy testing situations (12).

In the preparation of an instrument to meet the objectives of the study, there was a need for the researcher to review and evaluate the instruments used in related studies. In looking into various data gathering instruments, the questionnaire was determined to be the most appropriate. The instrument used to assess the agricultural literacy of students in the sample was selected from a modified version of the instrument which was used by the Kansas Foundation of Agriculture in the Classroom. The selection was limited to questions relating to the objectives of this study. Questions related to agriculture in the Bahamas were added to better assess the students' knowledge of agriculture. The instrument was designed in such a manner that the first objective related to the first section of the assessment instrument. The second objective related to section two and section three of the assessment instrument. The third objective related to questions fifteen and sixteen of section two and questions twenty-three through thirty-two of section three.

The assessment instrument was tested for face validity by the researcher's graduate advisor and graduate colleagues. Furthermore, pilot testing was conducted at the College of the Bahamas in Nassau, Bahamas.

Conduct of the Study

Schools who agreed to cooperate, selected students to participate in the study. Students were given oral instructions so that all responses were given in a consistent fashion. The responses to short-answer and multiple-choice questions were made on the instrument itself. The participating students were given time to complete the assessment instrument. The researcher was present to administer the assessment instrument and administer the instructions. Upon completion of the instrument, the students handed the test to the researcher.

Analysis of the Data

Since this was a descriptive study assessing agricultural awareness, the data were described by utilizing mean, percentages and ranges in scores.

Key (8) stated,

> Descriptive statistics were used to describe groups of numerical data such as test scores, numbers of hours of instruction, or the number of students enrolled in a particular course. The primary use of descriptive statistics was to describe information or data through the use of numbers. The characteristics of groups of numbers representing information or data were called descriptive statistics.

The average number of correct responses for all questions for students was reported as a percentage. Each student's score was calculated by dividing the total number of correct responses by the total number of responsees. The mean correct score was obtained by totaling all of the individual scores and dividing by the total number of students.

An interval scale with percentage levels ranging from 50 percent to 100 percent correct served to determine levels of agricultural awareness. The level categories

were arbitrarily chosen, but relatively consistent with pervious agricultural literacy assessments studies. The awareness levels were labeled in categories and assigned the following percentages values: "Low" level of awareness = 50 percent correct responses or below; "Minimal" level of awareness = 51 to 70 percent; "Moderate" level of awareness = 71 to 90 percent; and a "High" level of awareness = 91 percent and above. In addition real limits were established to more accurately define and describe the responses secured by the instruments. The set limits for the levels of agricultural literacy were: 50.49 percent correct and below for "Low"; 50.50 to 70.49 percent correct for "Minimal"; 70.50 to 90.49 percent for "Moderate"; 90.50 to 100 percent correct for a "High" level.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The major intent of this study was to assess the agricultural awareness of high school seniors in Nassau, Bahamas. To accomplish this purpose, the following objectives were formulated.

1) To determine the perceptions of Bahamian high school seniors toward agriculture.

2) To determine the awareness level of Bahamian high school seniors concerning agricultural concepts.

3) To determine the awareness level of Bahamian high school seniors with regard to Bahamian agriculture.

The accessible population was eighty-four selected high school seniors at selected schools. Four schools were public and four were private schools.

To better understand this study the primary goal of this chapter was to examine the data collected and report the findings in a logical order according to the format and sequence of the study objectives and the instrument. The data is presented by mean responses rounded to the nearest tenth.

The percentages in the figures was derived by grouping the responses given on the assessment instruments and dividing the group responses by the total number of students.

Figure 1 revealed that 20.2 percent of the students perceived agriculture to be farming and ranching only and 79.8 percent perceived agriculture to be more than farming and ranching. Some of the students perceived agriculture to be "education", "science" and "economics".

Figure 1

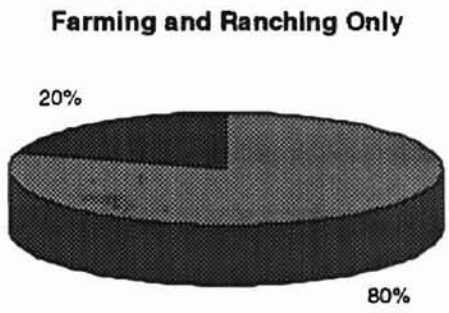


Figure 2 revealed that 73.8 percent of the students perceived agriculture to be work intensive only and 26.2 percent of the students perceived agriculture to be more than work intensive. Some of these students perceived agriculture as "a way of life", "helps keep the air clean", and "good to do for fun".

Figure 2

Figure 3 revealed that 76.2 percent of the students perceived agriculture to be production only and 23.8 percent of the students perceived agriculture to be more than a production industry. Some of these students perceived agriculture as "the rearing of animals and the study of them".

Figure 3

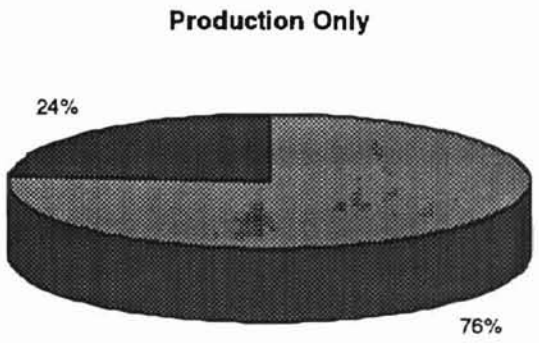


Figure 4 revealed that 88 percent of the students reflected a positive perception about agriculture and 12 percent reflected a negative perception about agriculture. Some of these perceptions were "boring", "going to sleep", "back breaking" and "slave work".

Figure 4

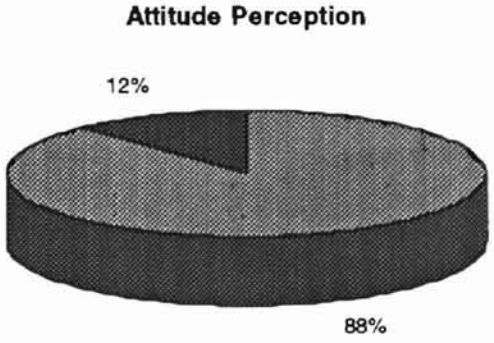


Table I through Table III showed the large farm size perception of high school students. The type of farms selected were pig, cattle and chicken farms. Table I showed the perceptions of public high school students of a large farm. The findings for a large pig farm showed 25 percent perceived a large farm to be less than 50; 10 percent perceived 50 to 100; 17.5 percent perceived 101 to 200; 25 percent perceived 201 to 500; 7.5 percent perceived 501 to 1000; 5 percent perceived 1001 to 5000; none perceived greater than 5000; and 10 percent did not answer. The findings for a large cattle farm showed 12.5 percent perceived less than 50; 22.5 percent perceived 50 to 100; 17.5 percent perceived 101 to 200; 22.5 percent perceived 201 to 500;15 percent perceived 501 to 1000; 2.5 percent perceived 1001 to 5000; 10 percent did not answer; and none perceived greater than 5000. The findings for a large chicken farm showed 10 percent perceived less than 50; 7.5 percent perceived 50 to 100; 15 percent perceived 101 to 200; 15 percent perceived 201 to 500; 20 percent perceived 501 to 1000; 15 percent perceived 1001 to 5000; 7.5 percent perceived greater than 5000; 9.1 percent did not answer.

Table I

Farm Size Perceptions by Percentages of Public High School Students

	Farm Size						
Farm Type	< 50	50 - 100	101 - 200	201 - 500	501 - 1000	1001 - 5000	5000 <
pig	25	10	17.5	25	7.5	5	-
cattle	12.5	22.5	17.5	22.5	15	2.5	-
chicken	10	7.5	15	15	20	15	7.5

Table II showed the perception of private high school students for a large farm size. The findings for a large pig farm showed 11.4 percent perceived a large farm to be less than 50; 11.4 percent perceived 50 to 100; 15.9 percent perceived 101 to 200; 22.7 percent perceived 201 to 500; 11.4 percent perceived 501 to 1000; 15.9 percent perceived 1001 to 5000; 2.2 percent perceived greater than 5000; and 9.1 percent did not answer. The findings for a large cattle farm showed 13.6 percent perceived less than 50; 9.1 percent perceived 50 to 100; 6.8 percent perceived 101 to 200; 27.3 percent perceived 201 to 500;15.9 percent perceived 501 to 1000; 6.8 percent perceived 1001 to 5000; 11.4 percent perceived greater than 5000; and 9.1 percent did not answer. The findings for a large chicken farm showed 6.8 percent perceived less than 50; 6.8 percent perceived 50 to 100; 13.6 percent perceived 101 to 200; 20.5 percent perceived 201 to 500; 18.2 percent perceived 501 to 1000; 11.4 percent perceived 1001 to 5000; 13.6 percent perceived greater than 5000; 9.1 percent did not answer.

Table II

Farm Size Perception by Percentages of Private High School Students

	Farm Size						
Farm Type	< 50	50 -100	101 - 200	201 - 500	501 - 1000	1001 - 5000	5000 <
pig	11.4	11.4	15.9	22.7	11.4	15.9	2.2
cattle	13.6	9.1	6.8	27.3	15.9	6.8	11.4
chicken	6.8	6.8	13.6	20.5	18.2	11.4	13.6

Table III showed the perception of the over all high school students for a large farm size. The findings for a large pig farm showed 17.9 percent perceived a large farm to be less than 50; 10.7 percent perceived 50 to 100; 16.7 percent perceived 101 to 200; 23.8 percent perceived 201 to 500; 9.5 percent perceived 501 to 1000; 10.7 percent perceived 1001 to 5000; 1.2 percent perceived greater than 5000; and 9.5 percent did not answer. The findings for a large cattle farm showed 13 percent perceived less than 50; 15.5 percent perceived 50 to 100; 11.9 percent perceived 101 to 200; 25 percent perceived 201 to 500; 15.5 percent perceived 501 to 1000; 4.8 percent perceived 1001 to 5000; 6 percent perceived greater than 5000; and 8.3 percent did not answer. The findings for a large chicken farm showed 8.3 percent perceived less than 50; 7.1 percent perceived 50 to 100; 14.3 percent perceived 101 to 200; 17.9 percent perceived 201 to 500; 19.1 percent perceived 501 to 1000; 13.1 percent perceived 1001 to 5000; 10.7 percent perceived greater than 5000; 9.5 percent did not answer.

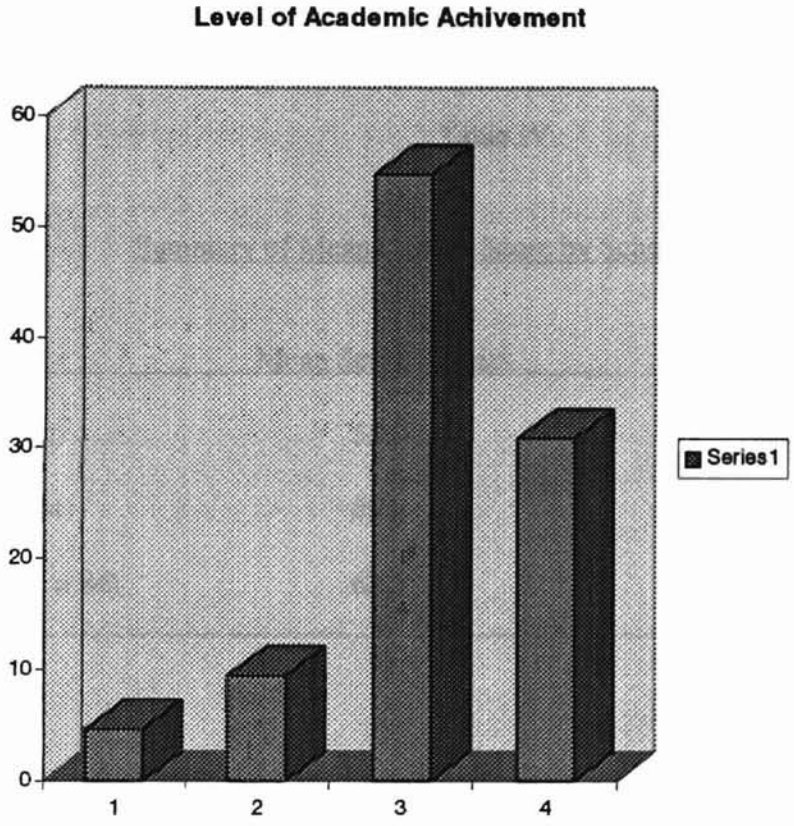
Table III

Farm Size Perceptions by Percentages of All High School Students

	Farm Size						
Farm Type	<50	50 - 100	101 - 200	201 - 500	501 - 1000	1001 - 5000	5000 <
pig	17.9	10.7	16.7	23.8	9.5	10.7	1.2
cattle	13	15.5	11.9	25	15.5	4.8	6
chicken	8.3	7.1	14.3	17.9	19.1	13.1	10.7

The data in figure 5 relating to the students' highest level of education hoped to be achieved revealed that 4.7 percent of the students selected high school; 9.5 percent of the students selected trade school; 54.8 percent of the students selected college; and 31 percent of the students selected professional school.

Figure 5



The other perceptions revealed that 2.4 percent of the students had previously lived or worked on a farm; only 3.6percent of the students were interested in pursuing a career in agriculture; and 27.4 percent of the students responded correctly to the question regarding the most agricultural product produced in the Bahamas.

Overall Awareness

Table IV revealed that eighty-four students were assessed. Forty-four (52.4%) were in private schools and forty (47.6%) were in public schools. The mean score at the public schools was 55.9 percent correct with a range of 31.2 percent to 82.0 percent. The mean score at the private schools was 69.9 percent correct and scores ranged from 50.8 percent correct to 85.3 percent correct. The overall mean correct score for all schools was 62.9 percent and scores ranged from 31.2 percent to 85.3 percent.

Table IV

Summary of Mean Correct Score by School Type

School Type	Mean Score Correct	Score Ranges
public (n = 40)	55.9	31.2 - 82.0
private (n = 44)	69.9	50.8 - 85.3
all schools (n = 84)	62.9	31.2 - 85.3

Awareness of Agricultural Concepts and Bahamian Agriculture

The data in Table V showed the mean correct score relating to agricultural concepts of the private, public and overall high school students. The mean correct score for agricultural production was 60.3 percent correct for the overall students; 65.6 percent correct for the private students; 54.9 for the public students; and scores ranged from 31.3 to 89.7 percent correct. The mean correct score for agricultural industry was 63.4 percent correct for the overall students; 69.6 percent correct for the private students; 57.3 for the

public students and scores ranged from 28.1 to 90.6 percent correct. The mean score correct for Bahamian Agriculture was 43.2 percent correct for the overall students; 45.1 percent correct for the private students; 41.3 percent correct for the public students and scores ranged from 8.3 to 75 percent.

Table V

Summary of Mean and Range Correct Scores Concerning Agricultural Concepts by Schools

Agricultural Concepts	Mean Correct Scores			Range
	Overall	Private	Public	
Agricultural Production	60.3	65.6	54.9	31.3 - 89.7
Agricultural Industry	63.4	69.6	57.3	28.1 - 90.6
Bahamian Agriculture	43.2	45.1	41.3	8.3 - 75

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

Introduction

The purpose of this chapter was to present a concise summary and major findings of the study. After an evaluation of these areas, conclusions and recommendations were outlined based on the analysis of the data and major findings.

Purpose of the Study

The purpose of this study was to assess the agricultural awareness of high school seniors in Nassau, Bahamas.

Objectives of the Study

In order to accomplish this purpose of the study, the following objectives were established:

1) To determine the perceptions of Bahamian high school seniors toward agriculture.

2) To determine the awareness level of Bahamian high school seniors concerning agricultural concepts.

3) To determine the awareness level of Bahamian high school seniors with regard to Bahamian agriculture.

Design of the Study

The instrument used to assess the awareness of agriculture among high school seniors in Nassau, Bahamas were replicated from an instrument designed and developed by Horn and Koch (7) at Kansas State University.

Permission to administer the instrument was obtained from the Director of Education in the Bahamas and principals of the participating high schools.

Students who participated in the study were given oral instructions and a copy of the assessment instrument (Appendix A). The researcher was present to administer the assessment instrument and give instructions. Test were color coordinated to compare assessment scores with variables associated with the study. Responses to the short answer and multiple choice answers were made on the instrument itself. The participating students were given time to complete the assessment instrument. Upon completion of the instrument the researcher collected all surveys. Descriptive statistics were used to analyze the data collected. The level categories of literacy were arbitrarily chosen, but relatively consistent with pervious agricultural literacy assessment studies.

Major Findings

In order to clarify the major findings of this study, the following subheadings were established:

1) An assessment of the students' perception concerning agriculture

2) An assessment of the students' awareness concerning agriculture concepts.

3) An assessment of students awareness concerning Bahamian agriculture.

An Assessment of The Students' Perceptions Concerning Agriculture

About 80 percent of the students perceived agriculture to be farming and ranching only; 74 percent perceived agriculture to be work intensive; 76 percent perceived agriculture to be production only; and 88 percent reflected a positive perception regarding agriculture. The level of students agricultural farm size perception was low. Over 69 percent of the students perceived a large pig farm to be less than 501 head of pigs and more than 65 percent perceived a large cattle farm to be less than 501 head of cattle.

An Assessment of Students' Awareness Concerning Agricultural Concepts.

The level of agricultural awareness broken down into three concepts. The first concept referred to production agriculture, the second concept referred to the industry of agriculture and the third concept referred to Bahamian agriculture. Responses revealed that students have more knowledge of concepts concerning the agricultural industry (63.5%), but have low level of knowledge concerning Bahamian agriculture as indicated by an overall mean score correct of 43.2 percent. The overall mean correct score (62.9%) was in the "Minimum" category of agricultural awareness. There was a broad dispersion of scores ranging from 31.2 to 85.3 percent.

An Assessment of Students" Awareness Concerning Bahamian Agriculture

Mean correct scores reported in Table V revealed a mean score of 43.2 percent correct score concerning Bahamian agriculture well into the "Low" category of agricultural awareness.

Conclusion

Based on the major findings and interpretation of the data, the following conclusions were made:

1) It was apparent that the students' perceptions of agriculture operations was limited to farming and ranching only, work intensive, production only and relatively small in relation to farm size.

2) Based on the findings that the mean correct score for students combined was 62.9 percent, indicating a minimum level of agricultural awareness, it was therefore concluded that high school seniors in the Bahamas were deficient in their understanding of agriculture.

3) It was further concluded students had low awareness of Bahamian agriculture.

4) It was also noted that only a small portion of the students had on the farm experience and a small amount wanted to pursue a career in agriculture.

Recommendations

Based in the findings and conclusions of this study, the researcher presented the following recommendations;

1) Agricultural programs should be designed and implemented into all Bahamian high school sectors.

2) Academic students should be encouraged to pursue career options in agriculture.

3) Agricultural and Educational officials should work together to emphasize the importance of agricultural education as it relates to the Bahamas.

4) Efforts should be made to direct a higher level of understanding among students concerning all sectors of agriculture.

5) Existing agricultural educational programs should be evaluated to improve performance of educating students.

Recommendation for Additional Research

The following recommendations are made in regard to additional research. The recommendations are judgments based on having conducted the study and on the examination of the findings of the study.

1. A comprehensive test should be developed to provide an annual assessment of students awareness of agriculture.

2. A study should be conducted to assess the effectiveness of existing agricultural educational programs in the Bahamas.

SELECTED BIBLIOGRAPHY

1. Bahamas Department of Statistics. (1992). Statistical abstract.

2. Clause, H. M. and Jost M. (1995). "Using Focus Groups to Teach Youths Perceptions of Agriculture." Journal of Extension. Vol. 33, 3.

3. Elley, W. (1988). How in the World Do Students Read? ED:360 613. 1992, 21.

4. Elliot, J. and Frick, M. "Food and Agriculture Awareness of Land Grant Universities Education Faculty." http://www.ssu.missouri.edu/SSU/AgEd/NAERM/s-i-4.htm

5. Encyclopedia America. (1990). vol. 55 #3.

6. Frick, J. M. (1996). "Sharing the Gospel According to Agriculture!"

7. Horn, Jerry and Becky Koch. (1986). An Assessment of Students' Knowledge of Agriculture. Center for Extended Studies, Kansas State University, Manhattan, Kansas.

8. Key, James P. (1987) Module on Descriptive Statistics. Research and Design AgEd 5980. Agriculture education Department, Oklahoma State University. P. 142

9. Khan, N.R. (1986 - 87) "Higher Education in Agriculture and Rural development --- a Sociological analysis." Training for Agriculture and Rural development. David Lubin Memorial Library Cataloguing.

10. Keya, O. S. (1982). "Agricultural Education and Training for Rural Development in Africa." Training for Agriculture and Rural Development. David Lubin Memorial Library Cataloguing.

11. King, E. and Hill, A. (1993). "Women's Education in Developing Countries Barriers, Benefits, and Policies. World Bank. (204 -205).

12. Lackman, L. and Nieto, D. R. and Glien, R. (1997). Instrument Development for low Literacy Audiences: Assessing Extension Program Personal Teaching Effectiveness." Journal of Extension. vol. 35, 1.

13. McCarthy, P. D. and Zanalda, G. (1985). "Economic Performance in small open economies the Caribbean Experience: 1980 - 92." Policy research working paper, World Bank Economic Review. (20).

14. Milton Hershey School. (1996). Food and Fiber System Framework with Learner Outcomes for K-8 Literacy. (1-28).

15. Moore, B. and Violet, R. "Middle School Agricultural Education Playing a Large Role in Agricultural - Literacy." Agricultural Education Magazine 68, 9 (9).

16. National Research Council, Board on Agricultural Education in Secondary Schools (1988). Understanding agriculture: New directions for education. Washington, D. C.: National Academy Press.

17. Nunnery, S. (1996). "Ag - Outside the Classroom: The Citizen's Agenda" . Agricultural Education Magazine. 68 ; 9 (12).

18. Orthel, G R., Sorensen, J. L., Shannan, R. L., and Riesenberg, L. E. (1989). High school students' perceptions of agriculture and careers in agriculture. Paper presented at the 8th Annual Western Regional Agricultural Education Research Meeting. Reno, NV.

19. Pichugina, V. G. (196). "Agriculture Education in Russia Challenges For Teachers." Agricultural education Magazine 68, 9. (15).

20. Rural Development Research Project. Building Institutions to Serve Agriculture. A summary Report 370 91724 c11056

21. Snowden, O. L. And Shoemake, R. G. (1973). Elementary programs for career education in agriculture. The Agricultural Education Magazine, 45 (7), 149 - 150.

22. Terry, R Jr.. and Lawver, E. D. (1995). "University Students' Perceptions of issues related to Agriculture." Journal of Agriculture Education 4 (64-71).

23. The Commonwealth Yearbook 1993 - 1994. (1995). London: HMSO.

24. World Bank. (1986). A World Bank Country Study the Bahamas Economic Report. (31-33).

25. World Bank. (1995). Labor and Economic Reforms in Latin America and the Caribbean. Washington, D. C.

APPENDIXES

APPENDIX A

ASSESSMENT INSTRUMENT

ASSESSMENT INSTRUMENT

Section I

Fill in the blank to complete the sentence.

I perceive agriculture to be _____
_____
_____.

When I hear the word agriculture I think of _____
_____
_____.

A large pig farm consist of _____ number of animals.

A large cattle farm consist of _____ number of animals.

A large chicken farm consist of _____ number of animals.

The most produced agricultural product in my country is _____.

Have you ever lived or worked on a farm? ___ Yes ____ No.

What is the highest level of education you hope to achieve?
_____ 1. complete high school
_____ 2. complete trade school
_____ 3. complete college
_____ 4. complete professional school (medicine, law)

Do you plan to pursue an career in agriculture? ____Yes ___ No.

Section 2

Read each statement and then underline Yes if the statement is correct, or no if the statement is not correct.

Yes No 1. Wheat is a grain.
Yes No 2. A goat will eat almost anything, even paper.
Yes No 3. Alfalfa hay is grown to feed people.
Yes No 4. Hamburger comes from a pig.
Yes No 5. Half of the earth's land is suitable for growing crops.
Yes No 6. Most of us could survive without farmers.
Yes No 7. Farming is considered a risky business.
Yes No 8. Aquaculture is the practice of raising food in water ?
Yes No 9. Are there any existing acquaculture programs in the Bahamas.
Yes No 10. Chickens lay eggs twice a day.
Yes No 11. Cows are only milked once a day.
Yes No 12. Leather is made from the hides of cattle and pigs.
Yes No 13. Spaghetti noodles are mostly made of wheat.
Yes No 14. Cheese is made from flour and oil.
Yes No 15. Goats can produce milk.
Yes No 16. Cows convert grass, hay, and other feeds that human can't eat to produce meat and milk

Section 3

Underline the best choice that answers the question, mark "DK" if you do not know the answer.

1. What does agriculture provide for people?
   a. Minerals b. entertainment c. fiber and shelter d. automobiles
   e. DK

2. Which career is least related to agriculture?
   a. actor b. economist c. consultant d. scientist
   e. DK

3. Milk is an important source of which nutrient?
   a. calcium b. iron c. vitamin A d. carbohydrates e. DK

4. Carrots are an important source of which nutrient?
   a. calcium b. iron c. vitamin A d. carbohydrates e. DK

5. Erosion of the soil is:
   a. soil which crumbles easily
   b. controlled by using lot of fertilizer
   c. the wearing away or loss of soil
   d. controlled by allowing unlimited grazing of cattle

6. Agricultural scientists might work with
   a. bacteria b. animals c. plants d. all of the above e. DK

7. Natural resources used by farmers include:
   a. water b. soil c. forest d. all of the above
   e. DK

8. The types of crops grown in a region depend upon
   a. climate and soil b. climate and equipment c. equipment and people
   e. DK

9. What makes farming such a risky business?
   a. regular income b. easy work c. good market price
   d. unpredictable weather e. DK

10. All of the following are basic needs except
   a. food b. shelter c. clothing d. transportation
   e. DK

11. Which section of the supermarket would you find cheese?
   a. dairy b. produce c. frozen foods d. bakery e. DK

12. A herbivore is an animal that
   a. sleeps during the day b. eats only plants c. eats plants and meat
   d. eats only meat e. DK

13. Aquatic means
   a. flies b. lives in water c. lives in trees d. earth dweller
   e. DK

14. Which of the following is known as a root crop?
   a. carrots b. broccoli c. water melons d. tomatoes e. DK

15. Bees are important because they
   a. never sleep b. work in the winter to make honey
   c. keep away mosquitoes d. help turn flowers into fruit, pollinate plants
   e. DK

16. Meat is a primary source of -
   a. carbohydrates b. calcium c. protein d. vitamin E e. DK

17. What process kills bacteria in fluids such as milk heat?
   a. homogenization b. gelatinization c. pasteurization
   d. germination e. DK

18. Which of the following natural resources would least likely influence agricultural crops?
    a. sunshine b. air c. soil d. natural gas e. DK

19. Wheat is a major ingredient in each of the following except -
    a. macaroni b. hamburger buns c. pizza crust d. tortilla chips e. DK

20. Which set of ingredients would most likely be found in margarine?
    a. skim milk b. soybean oil, whey & water c. soybean oil, flour
    d. flour & water e. DK

21. Which layer of soil contains the most organic matter?
    a. residual soil b. top soil c. parent material d. subsoil e. DK

22. The major concern of the harvesting of large amounts of forests, worldwide is
    a. soil erosion b. the warming of the earth's surface
    c. depletion of fossil fuels d. the depletion of oxygen in the earth's
    e. DK atmosphere

23. Which of these departments is a part of the Ministry of Agriculture?
    a. B.A.I.C. b. Abattoir c. Produce Exchange d. All of the above
    e. DK

24. Which of these crops are not produced in the Bahamas?
    a. pine apples b. tomatoes c. cucumbers d. apples e. DK

25. Which island uses the most farm acreage?
    a. Andros b. Grand Bahama c. Abaco
    d. Long Island e. DK

26. Which of these products does the Bahamas export?
    a. bananas b. onions c. oranges d. none of the above e. DK

27. Which products is mostly exported by the Bahamas?
    a. spices b. vegetables c. citrus d. none of the above
    e. DK

28. Which of these islands have the most soil availability?
    a. Eleuthera b. Grand Bahama c. Abaco d. Long Island
    e. DK

29. Which of these islands have the most crop production?
    a. Eleuthera b. a Grand Bahama c. Abaco d. Long Island
    e. DK

30. Name one island known for its onion production
    a. Bimini b. Andros c. Abaco d. Exuma e. DK

31. Which island produces the most cabbage?
    a. Eleuthera b. a Grand Bahama c. Abaco d. Long Island
    e. DK

32. Which island produces the most sweet pepper?
    a. Andros b. Grand Bahama c. Abaco d. Long Island
    e. DK

33. Most bacon is made from
    a. cow hides b. pig neck c. processed meat d. pig belly e. DK

34. Which country produces the most food?
    a. Japan b. Canada c. United States d. Africa e. DK

35. Farmers use pesticides to control:
    a. insects b. erosion c. stray cats d. hurricane e. DK

36. Veal is the meat of which young animal?
    a. chickens b. hogs c. sheep d. cattle e. DK

37. Mutton comes from which animal?
    a. goat b. hogs c. sheep d. cattle e. DK

38. Which of the following crops are used in cereals?
    a. wheat b. corn c. rice d. all of the above e. DK

39. Which of the following can be used by farmers to increase production?
    a. old records b. computers c. machinery d. all of the above e. DK

40. Select the correct order of the food marketing system.
    a. distribution, processing, production, retailing
    b. production, processing, distribution, retailing
    c. retailing, production, processing and distribution
    d. production, distribution, processing, retailing

41. Chickens are fed mainly on?
    a. grass b. grains c. meat d. fruit e. DK

42. Butter is
    a. milk fat b. milk protein c. made from pigs
    d. used to make milk e. DK

43. Cabbage can be purple, green or
    a. red b. blue c. yellow d. orange e. DK

44. How can we convert grass into protein for humans to eat?
    a. cut it and eat it b. allow cows to graze and then eat beef
    c. cut it and after it dry eat it d. burn the grass and plant wheat
    e. DK

45. The processing of wheat into flour is called -

a. grinding b. blending c. baking d. milling e. DK

APPENDIX B

PERMISSION TO CONDUCT STUDY

BY BAHAMAS GOVERNMENTAL DEPARTMENTS

MINISTRY OF EDUCATION AND TRAINING

P O Box N3913/14 Nassau Bahamas

Your reference

Our reference

Date September 4, 1997

Dear Principal:

Mr. John A. Cash is one of our Agriculture Education Students studying at Oklahoma State University.

He is in the process of conducting a study on "The Perception and Attitude of High School Students Towards Agriculture."

Please afford him any assistance which will help him to successfully complete his assignment.

Your cooperation would be greatly appreciated.

Yours sincerely,

Olga A. Clarke

Dr. Olga A. Clarke
Student Affairs

OAC/srr

Ministry of Education & Training
SEP 4 1997
Nassau, Bahamas

DEPARTMENT OF AGRICULTURE
P. O. Box N3028
Nassau, Bahamas

5 September, 1997

To Potential Sponsors and Supporters

Mr. John Cash, a Bahamian graduate student at Oklahoma State University, is undertaking the research work for his thesis in the Bahamas.

He will be studying the perception and attitude of Bahamian high school students towards agriculture.

Given the intention of the Ministry of Agriculture and Fisheries to expand the agriculture sector in The Bahamas, the results of Mr. Cash's study could well be important in determining the future direction of agricultural studies in schools, and in developing incentives to encourage young Bahamians to pursue agriculture as a career.

I urge you to support Mr. Cash with material and financial assistance in order to enable him to undertake his study, due to begin shortly. I also urge you to facilitate Mr. Cash's study in whatever way you can.

Sincerely,

Carl F. Smith
Director of Agriculture

APPENDIX C

INSTITUTIONAL REVIEW BOARD

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 06-18-97 **IRB#:** AG-97-027

Proposal Title: AGRICULTURAL AWARENESS OF HIGH SCHOOL SENIORS 18 YEARS OF AGE OR OLDER IN NASSAU, BAHAMAS

Principal Investigator(s): James P. Key, John Cash

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE APPROVAL PERIOD.
APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature

Chair of Institutional Review Board

Date: October 27, 1997

cc: John Cash

VITA

JOHN CASH

Candidate for the Degree of

Master of Science

Thesis: AN ASSESSMENT OF AGRICULTURAL AWARENESS OF HIGH SCHOOL SENIORS IN NASSAU, BAHAMAS

Major Field: Agricultural Education

Biographical:

Personal Data: Born in Nassau, Bahamas, October 31, 1971, the only son of Barbara Cash.

Education: Graduated from Nassau Christian Academy, Nassau, Bahamas in May 1989; received Associate of Science Degree in Agricultural from Frank Philips College at Borger, Texas in May, 1992; received Bachelor of Science degree at Oklahoma State University at Stillwater, Oklahoma in May 1995; completed requirements for the Master of Science degree at Oklahoma State University in December, 1997.

Professional Experience: Grocery stockman at City Market in Nassau Bahamas, 1985 - 1988; Commercial Fisherman 1988 to present in Nassau, Bahamas.